

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE SCORE INFLUENCE ON FIRM PERFORMANCE AMIDST INDONESIA- MALAYSIA-THAILAND GROWTH TRIANGLE LISTED COMPANIES

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Abstract

Environmental, Social, and Governance (ESG) scores have been widely explored regarding their role in firm performance, yet few studies have examined their significance from a regional perspective. This research addresses this gap by analyzing the comprehensive impact of ESG scores within Indonesia, Malaysia, and Thailand. Guided by stakeholder-agency theory, which posits that higher ESG scores lead to improved firm performance, the study employs secondary data, including ESG scores from S&P Capital IQ Pro and firm performance measured by return on assets (ROA). Using a quantitative approach, the findings reveal that average ESG scores vary across the observations, with Thailand scoring highest (40.698), followed by Malaysia (25.032), and Indonesia (20.984). The results indicate a significant positive relationship between ESG scores and firm performance. Moreover, business risk, firm size, and growth rate are found to exert a strong influence on firm performance, further emphasizing the importance of firm-specific characteristics alongside ESG practices in shaping corporate outcomes.

Keywords: ESG reporting, ROA, Stakeholder-agency theory, Listed companies, IMT-GT.

1. INTRODUCTION

Environmental, social, and governance (ESG) dimensions have increasingly shaped corporate economic development, as firm activities often generate interconnected issues, such as environmental contamination, labor practices, and ethical concerns, within and across organizations (Hilend et al, 2023). In response, ESG management broadens the traditional focus of corporate governance beyond shareholders, investors, and creditors to include a wider array of stakeholders. The integration of ESG and economic management is considered a strategic approach to support sustainable corporate growth. In today's business landscape, ESG

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management and disclosure have become crucial components of effective corporate governance, aiming to mitigate information asymmetry and agency costs (Velte, 2016). ESG scores serve to increase transparency, enhance managerial accountability, and align organizational interests. To ensure meaningful evaluation, the availability of credible ESG performance indexes is crucial, with S&P Capital IQ emerging as one of the most widely utilized tools for assessing corporate ESG performance.

The advantages of strong ESG performance and high ESG scores are reflected in improved corporate outcomes, including enhanced goodwill, superior financial and non-financial performance, stronger market reactions, and progress toward sustainable development. These benefits are grounded in stakeholder-agency theory, which suggests that ESG reporting helps to reduce information asymmetry and utility costs among internal and external stakeholders. Managers increasingly recognize the strategic value of ESG initiatives, as they contribute not only to organizational performance but also to stakeholder satisfaction, both of which are often positively associated with higher ESG scores (Velte, 2016).

This study investigates the current state of ESG performance, as measured by ESG scores, among publicly listed companies in the IMT-GT region, comprising Indonesia, Malaysia, and Thailand. It further examines the extent to which ESG scores influence firm performance among these companies. The research addresses two key questions, which guide the analysis:

- (1) What are the ESG scores of listed companies within the IMT-GT region?
- (2) Do ESG scores affect the firm performance of these listed companies?

This study offers several significant contributions. It seeks to assess the level and impact of ESG scores within the IMT-GT region, stressing their influence on firm performance. Additionally, the research aims to validate the relevance and applicability of ESG scores as tools for advancing corporate sustainability. Finally, it evaluates the extent to which stakeholder-agency theory explains ESG score dynamics in Thailand and other Asian countries.

The structure of this research comprises five sections. The first section introduces the study, outlining its context and objectives. The second section presents the theoretical framework used to understand ESG scores within the IMT-GT region and their influence on firm performance, while also reviewing relevant literature and formulating the research hypotheses. The third section describes the research methodology, including the research design, population and sample, data collection procedures, and analytical techniques. The fourth section presents the research findings and discussion. The fifth section offers a conclusion, highlighting key implications, limitations, and recommendations for future research.

2. LITERATURE REVIEW

The literature review offers an in-depth understanding of existing scholarly knowledge, serving as a foundation for conducting research using qualitative, quantitative, or mixed-method approaches (Massaro et al, 2016). This section introduces the concept of Environmental, Social, and Governance (ESG), outlining the development of the research hypotheses and presenting the conceptual framework guiding this study of the influence of ESG scores on firm performance among listed companies within the Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT). A detailed review of the relevant literature is presented as follows.

2.1 Environment, Social, Governance

Environmental sustainability, social inclusiveness, and economic growth collectively define the concept of sustainable development, which has gained increasing attention from stakeholders (Chung et al, 2023). Heightened concerns regarding pollution, human rights, child labor, corporate social responsibility, and good governance have driven a growing expectation for accountability among both corporate entities and governments. In response to these demands, the concept of Environmental, Social, and Governance (ESG) was introduced in 2005 to enhance the availability of non-financial information. This initiative extends beyond corporate responsibility to encompass actions at the national and international levels, including those of the United Nations. The Sustainable Development Goals (SDGs) are closely aligned with ESG principles and carry significant implications for both society and the economy (DeFranco et al, 2021). The literature also indicates the evolution of socially oriented management theories and a philosophical shift toward ESG-focused governance. Financial markets and institutional investors have played a pivotal role in advancing sustainable business practices by encouraging the disclosure of ESG-related information to support SDG-aligned decision-making (Busch et al, 2016). Globally, ESG disclosure requirements have increasingly moved toward mandatory transparency (Krueger et al, 2021), reflecting a broader shift in management priorities from a sole focus on financial outcomes to a more holistic awareness of environmental, social, and governance responsibilities (Pérez et al, 2022). This trend accentuates the growing importance of corporate transformation in economic, environmental, and social sustainability through ESG disclosure (Hawn & Ioannou, 2016).

Previous research has examined various dimensions of ESG reporting and its implications. Serafeim (2018) explored the strategic choices underlying ESG disclosures, while Kotsantonis et al. (2016) demonstrated that economic cycles significantly influence sustainability reporting practices. Organizational culture has also been identified as a key factor shaping sustainability initiatives, which in turn affect ESG scores. More recently, Rahman and Alsayegh (2021) investigated the determinants of ESG scores in Asian firms, finding that economic performance, leverage, firm size, and overall financial performance positively influence ESG reporting, as supported by diverse estimation techniques. The positive relationship between ESG practices and firm performance has been extensively reviewed, notably by Friede et al. (2015), who synthesized empirical evidence affirming this connection. Earlier contributions, such as Hoffmann and Busch (2008), examined the role of sustainable investment in enhancing firm performance. Recent reviews further confirm positive associations between ESG scores and firm performance across various national or regional contexts, including Italy, Europe, the United States, Pakistan, China, and Germany (Halid et al, 2023). However, some studies present a contrasting view, reporting a negative impact of ESG disclosure on firm performance (Khandelwal et al, 2023), suggesting the need for further investigation into contextual and methodological factors influencing these outcomes.

2.2 Theoretical Framework and Hypothesis Development

Several previous studies have identified a shift from a shareholder-centric model to a stakeholder-oriented approach as a key driver of firm performance (Clark et al, 2015). Although multiple theoretical frameworks have been employed in ESG research, this study adopts the stakeholder-agency theory in explaining the influence of ESG scores on the corporate outcomes of listed companies in the IMT-GT region. This theory, developed by Hill and Jones (1992), extends traditional agency theory by incorporating the relationships between top management (agents) and both shareholders (principals) and other stakeholder groups, particularly in countries with less efficient markets. It posits that all stakeholders are engaged

in implicit and explicit contracts that contribute to corporate value, while top management is uniquely positioned to establish and manage these relationships. As the only group with direct control over corporate decision-making, top management acts as an agent not only for shareholders but also for the broader network of stakeholders. This theoretical perspective provides a comprehensive framework for analyzing how ESG practices influence firm performance in emerging economies.

Within the stakeholder-agency theory, two primary relationship types are identified: the relationship between top management (agents) and shareholders (principals), and the relationship between top management and other stakeholders. In the former, challenges such as information asymmetry, agency costs, and conflicts of interest commonly arise, necessitating efforts from both parties to mitigate these issues. In the latter, top management must address the problem of utility loss, which occurs when fulfilling stakeholder demands leads to a reduction in the corporate resources needed for operational and strategic activities. The theory posits that stakeholder claims, when satisfied, can constrain the firm's ability to allocate resources toward growth-oriented initiatives such as diversification. Hence, top management must strike a balance between meeting stakeholder expectations and minimizing utility losses. Agency costs, conflicts of interest, and utility losses are inherent across both relationships, emphasizing the need for governance structures that manage and reconcile divergent interests among shareholders and stakeholders alike.

In this context, ESG scores are expected to help reduce information asymmetry, agency costs, and utility losses arising from the relationships between top management and both shareholders and other stakeholders. Beyond addressing information gaps, ESG practices can also mitigate conflicts of interest across these relationships. For top management, the need to enhance transparency and stakeholder trust becomes more pressing, particularly in markets where stock valuations may be undervalued. Consequently, higher ESG scores are often positively associated with stakeholder satisfaction and improved corporate outcomes (Velte, 2016). The stakeholder-agency theory provides a suitable framework for understanding all objectives of this study. For instance, when examining the level and pattern of ESG scores, the theory helps explain how top management may respond to stakeholder demands through enhanced ESG practices. Relatedly, when evaluating the impact of ESG scores on firm performance, the theory offers insight into how firms navigate the dual responsibility of balancing the interests of shareholders and broader stakeholder groups.

Thus, the conceptual framework of this research explores the influence of the Environment, Social, and Governance Score on firm performance among listed companies of the Indonesia-Malaysia-Thailand Growth Triangle, as shown in Figure 1. The following hypothesis is proposed:

H1: ESG scores positively influence the firm's performance.

Figure 1 The Direct Relationship Between ESG Scores and a Firm's Performance



3. METHODOLOGY

This section provides the research methods, population and sample, data collection, and data analysis for this research on the influence of the Environment, Social, Governance Score on firm performance among listed companies of the Indonesia-Malaysia-Thailand Growth Triangle. The detailed methodology is as follows:

3.1 Research Methods

This study employed a quantitative archival research method, utilizing secondary data obtained from S&P Capital IQ and Capital IQ Pro. To examine the current state of Environmental, Social, and Governance (ESG) performance within the IMT-GT region, descriptive statistical analysis was applied to assess ESG scores. Furthermore, to investigate the influence of ESG scores on firm performance, inferential statistical techniques—specifically correlation and regression analyses—were performed.

3.2 Population and Sample

The population and sample of this research consisted of all listed companies in Indonesia, Malaysia, and Thailand for which ESG scores are available through S&P Global (S&P Capital IQ, 2023). As summarized in Table 1, the distribution of observations across the IMT-GT region constitutes 37% from Thai-listed companies, 34.39% from Malaysian-listed companies, and 28.61% from Indonesian-listed companies.

Table 1 Observation Summary

Country	Number of firms	Number of Observations	Percentage (%)
Indonesia	75	297	28.61
Malaysia	91	357	34.39
Thailand	100	384	37.00
Total	266	1,038	100

(Source: author)

3.3 Data Collection

Data on ESG scores, firm performance, and firm characteristics were obtained from S&P Capital IQ and Capital IQ Pro, widely recognized databases that provide comprehensive financial and economic information (Phillips, 2012). The ESG score, used as the independent variable in this study, represented an external assessment of each firm's sustainability performance. It incorporates ESG disclosure, media analysis, and stakeholder perspectives, and was developed using a rigorous, performance-based methodology. Scores range from 0 to 100, with higher scores indicating stronger ESG performance. Firm performance, serving as the dependent variable, was measured using return on assets (ROA). Additionally, the study included control variables—firm risk, firm size, and firm growth—based on their established relevance in prior literature.

Table 2 Variable Measurements

Variable	Notation	Measurement
Firm performance	ROA	Return on assets ratio
ESG score	ESG	S&P Capital IQ Pro
Risk	DE	Debt to equities ratio
Firm size	ln_TA	Natural logarithm of total assets
Growth Rate	Growth	(Revenues _t -Revenues _{t-1})/Revenues _{t-1}
Industry	INDUSF	Industry fixed effect
Country	COUNF	Country fixed effect

3.4 Data Analysis

Descriptive statistics, including mean, standard deviation, minimum, and maximum values, were employed to examine the level of ESG scores among the listed companies. Subsequently, bivariate correlation analysis was conducted to identify potential multicollinearity among the variables. However, while correlation analysis provides insight into the relationship between two variables—such as ESG score and return on assets (ROA)—it does not account for the influence of other variables. For example, investing in ESG may increase costs and affect firm performance without considering the role of other firm characteristics. To address this limitation, multiple regression analysis was used, as it allows for the inclusion of both the variable of interest (ESG score) and relevant control variables, such as firm size, risk, and growth. This approach adheres to the principle of *ceteris paribus*, enabling a more accurate estimation of the impact of ESG performance on ROA while holding other factors constant. As a result, the direction and magnitude of ESG's effect on firm performance may differ between bivariate and multivariate analyses, highlighting the importance of controlling for additional variables in regression models.

As previously noted, the dataset used in this study does not constitute panel data, as ESG performance is assessed voluntarily by a third-party provider—S&P Capital IQ Pro—and firms may opt into the evaluation in different years. For instance, Company A may participate from 2013 to 2020, Company B from 2018 to 2020, Company C only in 2017, and Company D only in 2020. Participation is discretionary and may vary annually. Given this irregularity in time-series coverage across firms, Pooled Ordinary Least Squares (OLS) regression is considered the most appropriate analytical approach. To address potential unobserved heterogeneity related to industry, country, and year-specific effects, dummy variables are included in the regression models to control for these fixed factors.

The Pooled Ordinary Least Squares (OLS) method was selected due to several practical and methodological considerations. These included data limitations and loss, the assumption of non-correlation between individual-specific effects, and the higher efficiency of estimates yielded by this approach (Park & Kwon, 2014). Also, the simplicity of the pooled OLS model avoids the complexity and potential loss of informativeness associated with fixed effects models, which may lead to inhomogeneous estimations (Schmidheiny & Basel, 2011). Prior studies have also demonstrated that Pooled OLS can outperform fixed and random effects models in explaining panel data under certain conditions (Koh & Ahad, 2020). Accordingly,

this study employed a pooled cross-sectional analysis to assess the potential influence of ESG scores on firm performance. The regression model used is presented below.

$$\text{ROA} = \beta_0 + \beta_1 \text{ESG} + \beta_2 \text{DE} + \beta_3 \ln_{-} \text{TA} + \beta_4 \text{Growth} + \beta_5 \text{INDUSF} + \beta_6 \text{COUNF} + \beta_7 \text{YF} + \varepsilon$$

Where:

ROA is the net income divided by total assets used as a proxy of firm performance

β is the regression coefficient

ESG is the environmental, social, and governance score

DE is the debt ratio comparing the amount of debt with equity to present gearing.

$\ln_{-} \text{TA}$ is the natural logarithm of total assets to present size of the firm.

Growth is current sales as a percentage of last year's sales.

INDUSF is an industry dummy.

COUNF is a country dummy.

YF is a year dummy.

ε is the error term.

All variables included in the model were winsorized at the 1st and 99th percentiles to mitigate the influence of extreme outlier values. Winsorizing is widely recommended in the literature as an effective technique for addressing outliers without removing observations from the dataset (Choi et al, 2018; Duru et al, 2020). Unlike trimming, this approach preserves the full sample size, which is critical for maintaining the statistical power and integrity of the analysis (Lusk et al, 2011). Following standard practices in prior research, the authors are confident that outlier effects have been adequately controlled and should not pose a significant concern in this study.

To address potential issues of heteroskedasticity and autocorrelation, the regression model was re-estimated using robust standard errors, as recommended by prior studies (Nguyen et al, 2015). The results obtained with robust standard errors were found to be consistent with the initial findings, indicating that heteroskedasticity and autocorrelation are unlikely to bias the results. Additionally, the data used in this study are pooled cross-sectional data rather than true panel data. Since the key variable of interest—ESG score—is a voluntary evaluation provided by a third party (S&P Capital IQ Pro), many firms appear in the dataset for a limited number of years, often only a single year (e.g., 2020). As a result, the dataset lacks a consistent time-series structure for most firms, and thus, serial correlation is not considered a concern in this analysis.

Normality of the data was assumed based on the Central Limit Theorem, which holds that sample distributions approximate normality when the sample size is 30 or greater (Koh & Ahad, 2020; Kumpamool, 2024; Kwak & Kim, 2017). To assess multicollinearity, Variance Inflation Factors (VIF) were calculated, and the highest VIF value observed was 1.89, indicating no multicollinearity concerns in the model, as seen in Table 5. Moreover, industry-country-year fixed effects were included to control for unobserved heterogeneity. The operational definitions and measurements of all variables are summarized in Table 2.

4. RESULTS AND DISCUSSION

This research offers novel insights with significant policy implications by analytically examining the influence of Environmental, Social, and Governance (ESG) scores on firm performance. The detailed findings are presented as follows.

4.1 Descriptive Statistics

Through this research, we found that among the IMT-GT countries, the highest average ESG score was observed in Thailand (40.698), followed by Malaysia (25.032), and Indonesia (20.984). These findings are consistent with Adeneye et al. (2023), who reported similar rankings of ESG scores for listed companies in the Stock Exchange of Thailand, Bursa Malaysia, and the Indonesia Stock Exchange. Detailed descriptive statistics are presented as follows.

Table 3 Descriptive Analysis

	Mean	SD	Min	Max
Panel A: Indonesia				
ESG	20.984	10.389	2.000	50.000
ROA (%)	7.632	7.920	-16.392	41.100
DE (Times)	0.762	1.429	0.000	12.338
ln_TA	21.948	1.427	17.570	25.410
Growth (%)	6.318	21.680	-0.994	342.570
Panel B: Malaysia				
ESG	25.032	10.858	1.000	69.000
ROA (%)	5.312	7.369	-40.660	62.121
DE (Times)	0.741	0.933	0.000	7.801
ln TA	22.076	1.614	17.459	26.086
Growth (%)	3.202	8.719	-0.994	85.495
Panel C: Thailand				
ESG	40.698	29.553	1.000	92.000
ROA (%)	4.561	4.764	-10.232	36.426
DE (Times)	0.918	0.980	0.000	12.477
ln TA	22.078	1.525	17.400	25.570
Growth (%)	6.448	18.336	-0.987	118.236

(Source: author)

Table 3 presents the descriptive statistics for ESG scores, firm performance, and firm characteristics across the IMT-GT countries. The highest mean return on assets (ROA) was observed in Indonesia at 7.632%, followed by Malaysia at 5.312%, and Thailand at 4.561%. Despite having the lowest average ROA, Thailand reported the highest average ESG score (40.698), compared to Malaysia (25.032) and Indonesia (20.984). The range of ESG scores in Indonesia was narrower (2.00–50.00), while Thailand and Malaysia exhibited wider distributions, with ESG scores ranging from 1.00 to 92.00 and 1.00 to 69.00, respectively. The

debt-to-equity (DE) ratios were relatively similar across the countries, with Thailand at 0.762, Malaysia at 0.741, and Indonesia at 0.918. Firm growth was comparable in Thailand (6.448%) and Indonesia (6.318%), while Malaysia showed a notably lower growth rate of 3.202%. In terms of firm size, the average values were nearly identical across the three countries: Thailand (22.078), Malaysia (22.076), and Indonesia (21.948).

Table 4 Correlation Analysis

	(1)	(2)	(3)	(4)	(5)
(1) ROA	1.000				
(2) ESG	-0.086** (0.005)	1.000			
(3) DE	-0.127** (0.000)	-0.006 (0.851)	1.000		
(4) ln_TA	-0.439** (0.000)	0.449** (0.000)	0.027 (0.385)	1.000	
(5) Growth	0.049 (0.107)	0.245** (0.000)	0.000 (0.991)	0.207** (0.000)	1.000

Note: p-values are shown in parentheses

** indicates significance at the 0.05 level

(Source: author)

The correlation analysis provides a deeper understanding of the relationships among the variables. As reported in Table 4, return on assets (ROA) exhibited a negative correlation with ESG scores. Debt and firm size showed moderate negative correlations with ROA, at -0.127 and -0.439 , respectively. In contrast, firm size demonstrated a significant positive correlation with ESG scores (0.449). While firm growth did not significantly correlate with ROA, it was positively and significantly correlated with both ESG scores (0.245) and firm size (0.207). Overall, the analysis indicates that there is no evidence of severe multicollinearity among the independent variables. Variables have been analyzed through examination of the correlations among them, with this analysis providing an in-depth understanding of the respective associations.

4.2 Hypothesis Testing

To test the research hypotheses, two regression models were employed: Model A and Model B. Model A examined the relationship between return on assets (ROA) and the independent variables, including ESG score and firm characteristics. Model B assessed the relationship between the same set of independent variables and return on equity (ROE), which serves as an alternative proxy for corporate financial performance. ROE was included as part of a sensitivity analysis to determine whether the findings remain consistent across different

measures of financial performance. The results and statistical significance of both models are presented in Table 5.

Table 5 The Influence of ESG Score on Firm Performance

VARIABLES	Model A	Model B
	ROA	ROE
ESG	0.053*** (5.646)	0.143*** (4.142)
DE	-0.564*** (-3.170)	1.934*** (2.984)
ln_TA	-2.262*** (-17.912)	-4.789*** (-10.408)
Growth	0.158*** (3.841)	0.351** (2.333)
Constant	55.372*** (18.564)	112.777*** (10.375)
The Highest VIF	1.89	1.89
Industry Dummies	Yes	Yes
Country Dummies	Yes	Yes
Year Dummies	Yes	Yes
Observations	1,038	1,038
Adjusted R-squared	0.355	0.211
Prob >F	0.000	0.000

Note: t-statistics in parentheses

***, **, and * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively.

(Source: author)

Table 5 displays the results of the regression analysis examining the influence of Environmental, Social, and Governance (ESG) scores on the firm performance of listed companies within the IMT-GT region, based on 1,038 firm-year observations. Industry, country, and year fixed effects were controlled to account for unobserved heterogeneity. The findings from Model A indicate that ESG scores have a positive and statistically significant impact on return on assets (ROA), aligning with prior research (Velte, 2017). This result

supports the notion that ESG disclosures help reduce information asymmetry, agency costs, and utility loss in the relationships between top management and both shareholders and other stakeholders. Moreover, by enhancing transparency and accountability, ESG performance may address conflicts of interest and improve stakeholder satisfaction—especially in contexts where stock markets may undervalue firms—thereby contributing to improved financial outcomes. The results from Model B, which uses return on equity (ROE) as an alternative measure of firm performance, further confirm the robustness of this positive relationship, reinforcing the value of ESG engagement in shaping favorable corporate outcomes.

The control variables—firm risk, firm size, and growth rate—were found to significantly influence firm performance. The negative relationships between financial risk, measured by the debt-to-equity (DE) ratio, and firm size, measured by the natural logarithm of total assets (\ln_{-TA}), and financial performance, are consistent with the findings of Murniati (2016). Larger firms, while typically more attractive to stakeholders due to their perceived stability and potential for profitability, may face operational inefficiencies or diminishing returns that affect performance. In contrast, high financial risk, indicated by elevated debt levels, often leads to increased interest obligations, which can constrain short-term operational capacity and negatively impact financial outcomes. Conversely, the positive relationship between growth rate and firm performance is attributed to the use of revenue as the growth proxy. As revenue increases, it generally signals improved market performance and operational success, which translates into higher profitability and stronger financial performance.

5. CONCLUSION AND RECOMMENDATION

This research not only identifies the level of ESG scores among listed companies in the IMT-GT region from 2013 to 2020 but also provides empirical evidence that ESG scores positively influence firm performance. The analysis reveals that Thailand reports the highest average ESG score (40.698), followed by Malaysia (25.032) and Indonesia (20.984). The findings demonstrate a significant positive relationship between ESG scores and return on assets (ROA) in the primary regression model, with this relationship remaining consistent when return on equity (ROE) is used as an alternative measure in the robustness test. Moreover, the study highlights the influence of firm-specific characteristics, namely, financial risk, firm size, and growth rate, on financial performance, offering additional insights into the drivers of firm outcomes in the IMT-GT context.

These findings offer important implications for both corporate management and policy development. First, they highlight the strategic value of prioritizing ESG performance, as higher ESG scores are associated with improved firm outcomes. Second, the results support the stakeholder-agency theory by underscoring the importance of firm responsiveness to stakeholder expectations and demonstrating how responsible corporate behavior can enhance reputation, stakeholder loyalty, and overall performance. Lastly, the study provides practical guidance for policymakers and regulatory bodies in the IMT-GT region, emphasizing the need to foster ESG integration to benefit both firms and their stakeholders. These insights may also encourage the broader adoption of ESG frameworks across the ASEAN Economic Community and other Asian economies, supporting regional efforts toward sustainable development and responsible business practices.

Despite its contributions, this research is subject to several limitations. First, ESG disclosure data were not collected from all listed companies in Thailand, Malaysia, and Indonesia, which may limit the generalizability of the findings. Expanding the sample size and ensuring greater diversity among firms could enhance the robustness of future analyses. Second, the study focused exclusively on firms listed in the main capital markets of the three countries, thereby excluding alternative markets such as Thailand's Market for Alternative

Investment (MAI), which may offer different ESG dynamics. Lastly, the analysis was based on data from only 266 listed companies, despite the existence of over 2,000 firms within the IMT-GT region. To address these limitations, future research should aim to include ESG score data from a more comprehensive set of listed companies across the IMT-GT region or extend the scope to the broader ASEAN Economic Community for more inclusive and representative findings.

CONFLICT OF INTEREST

There is no conflict of interest to declare.

ACKNOWLEDGEMENT

This research project was financially supported by Mahasarakham University.

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